

U.S. Patent Application Serial No. 10/667,033
Reply to Office Action dated January 26, 2005

Remarks:

Applicant has read and considered the Office Action dated January 26, 2005 and the references cited therein. Claims 1-14 are pending in the application.

In the Action, claims 1, 2, 5-11, 13 and 14 were rejected under 35 U.S.C. § 102(b) as being anticipated by Taft. In addition, claims 3, 4 and 12 were rejected under 35 U.S.C. § 103 as being unpatentable over Taft. Claim 1 is directed to:

"A framing system for a composite concrete floor, the framing system comprising horizontally extending primary framing members supporting secondary framing members across the primary framing members, said primary and secondary framing members being made of a metallic structural material, each of said secondary framing members having two opposite ends provided with a shear shoe, *said shear shoe being fixed to said primary framing members by means of a structural joint sufficient to provide a shear connection between said concrete floor and said primary framing members.*" (emphasis added)

The shear shoe of the present invention provides advantage over the prior art. As mentioned, for example, on page 7 of the description, lines 11 to 30 of the present application:

"The end shoes 13 of the joists 12 are fixed to the primary framing member 11 by means of a structural joint 15 sufficient to provide a shear connection between the concrete floor 14 and the primary framing members 12. *The shear shoe thus acts as a shear connector able to transfer the horizontal loading from the slab to the primary framing member by the end shoe structurally fixed to the primary framing member 11.* The structural joint 15 is preferably a weld joint between the shear shoe 13 and the primary framing member 11, the weld having a length sufficiently long so as to provide such structural joint. Although not simple, the determination of shear capacity between two components is of common knowledge for a person in the art. Hence, such person, having knowledge of the forces applied on the floor, the length

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and height of the primary and secondary framing members used for the floor system, knows how to calculate the shear necessary to develop the composite action between secondary and primary framing members and the right spacing between the connectors. As for example, in one preferred embodiment, an end shoe Hambro D500™ with a concrete slab of 2 ¾ inches reinforced by a wire mesh 6 x 6 6/6 fixed to the primary framing members by a weld of at least 2 inches provided on each side of the *shoe can provide a capacity of 30.2 Kips per shoe*. The total capacity provided will be the number of shoes installed on the primary framing member by 30.2 Kips per shoe." (emphasis added)

Contrary to the contention in the Office Action, Taft does not disclose nor suggest a shear shoe fixed to the primary framing members by means of a structural joint. Taft only discloses and teaches a shoe (element 46) for the secondary member (14), the shoe being supported on the top chord (20-22) of the primary member (12). In column 2, lines 1 and 2, Taft discloses that the top chord of the primary framing member (12) supports joists (secondary framing member) in conventional fashion.

In column 3, lines 21 to 22, Taft states:

"Note that the end shoe 46 is supported on the lower flange of channel members 22 and 20". (emphasis added)

Further, in column 3, lines 39 to 44, Taft states that:

"Of importance is the fact that once the primary framing member 12 and the secondary framing members are in place, the concrete is poured to embed the two chord members 20 and 22 in the concrete so that the top cord becomes a continuous or substantially continuous, shear connector in a composite truss and concrete floor system". (emphasis added)

Nowhere in this document, is it taught or suggested to fix the end shoe to the primary framing members by means of a structural joint. Taft only teaches that the shoe is supported by

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the top chord of the primary framing member. The Taft reference does not further elaborate on the shoe. Therefore, the shoe disclosed by Taft, which is simply supported by the top chord, cannot be considered as a shear shoe able to resist the horizontal shear forces between the slab and the primary framing members.

As can be appreciated, the shoe disclosed in Taft is not a shear connector. The shear connection in Taft is provided by the top chord of the primary framing members. The top chord acts as a continuous shear connector of the primary member. Moreover, the shear connector of the present invention would not be obvious in view of Taft, to one of ordinary skill in the art at the time of the invention.

On the contrary, the shoe recited in claim 1 of the present application, is a shear shoe fixed to the primary framing members by means of a structure joint sufficient to provide a shear connection between the concrete floor and primary framing members. The shoe at the end of the secondary members is connected to the top chord of the primary members sufficiently to produce a local shear connection at each location, which is quite different than the continuous shear connector disclosed in Taft. Applicant asserts that claim 1 and the claims dependent on claim 1 are neither taught nor suggested by Taft or any other prior art or combination thereof.

For the same reasons discussed above, Applicant asserts that the method of claim 11 is neither shown nor suggested by the Taft reference. Claim 11 is directed to:

"A method of erecting a framing system for a composite concrete floor comprising the steps of providing primary and secondary framing members made of a metallic structural material, each of said secondary framing members having two opposite ends provided with a shoe; placing said primary framing members in parallel relation; placing said secondary framing members transversally between said primary framing members with said shoes bearing on the primary framing members; and fixing said shoes to said primary framing members with a structural joint sufficient to provide a shear connection for said primary framing members."

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As discussed above, Taft neither teaches nor suggests a shear shoe connecting the members, as also recited in steps of the method of claim 11. Claim 11 distinguishes over Taft for the reasons discussed above and others. Applicant asserts that claim 11 and the claims dependent on claim 11 are neither taught nor suggested by Taft or any other prior art or combination thereof.

Applicant asserts that after careful inspection of the true structure of the cited reference and the recited invention, all of the elements of the claims are neither shown nor suggested by Taft. Therefore, Applicant asserts that the claims patentably distinguish over Taft.

A speedy and favorable action on the merits is hereby solicited. If the Examiner feels that a telephone interview may be helpful in this matter, please contact Applicant's representative at (612) 336-4728.

Respectfully submitted,

MERCHANT & GOULD P.C.

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